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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,535	07/05/2005	Yoshiyuki Nousou	264008US8PCT	2490

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

GRUN, ROBERT J

ART UNIT	PAPER NUMBER
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4111

NOTIFICATION DATE	DELIVERY MODE
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08/07/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/518,535	Applicant(s) NOUSOU ET AL.	
	Examiner ROBERT J. GRUN	Art Unit 4111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/30/2004, 12/27/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 4-6 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from a multiple dependent claim. Claim 3 is multiply dependent on claim 1 or 2, therefore claim 4 cannot also be multiply dependent thereon. Claim 6 is similarly defective. Claim 5 is dependent on claim 4 and cannot therefore be considered. Claim See MPEP § 608.01(n). Accordingly, the claims 4-6 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kabumoto et al. (US Patent No. 5,844,731) in view of Thornton (US Patent No. 5,938,317), and further in view of Shumake et al. (PG PUB No. 2003/0205489 A1) and Schirer (US Patent No. 6,155,325).

- Regarding Claims 1 and 2: Kabumoto discloses the manufacture of a light reflecting plate made of thermoplastic polyester plastic foam, which has a high reflectance of visible light (abstract) having multiple angled concave surfaces (figures 3-4). The foam disclosed by Kabumoto has a mean cell (pore) diameter of 50 um (abstract). Kabumoto does not disclose the bending of the reflective

foam in forming the reflecting plate. Kabumoto instead thermoforms the foam. Kabumoto also does not disclose the cutting of slits to enable folding of the reflector plate (perforation lines). However, bending the reflection plate (250) in order to form a pattern for diffuse light scattering is taught by Thornton (col. 18 lines 50-52 and figures 1, 33, and 37). The reflecting plate of Thornton has a similar arc shape to that of Kabumoto. A person having ordinary skill in the art at the time of invention would have found it obvious to bend the reflection plate instead of vacuum thermoforming in forming the reflecting plate of Kabumoto because it requires less specialized machinery and is cheaper to fold a pattern than it is to vacuum thermoform a pattern. Furthermore, a person having ordinary skill in the art at the time of invention would have found it obvious to add perforation or score lines in the foam before the reflecting foam sheet is bent into desired configuration, because: a) Shumake discloses die cutting and/or scoring a foam sheet "to facilitate folding" (pg. 2 ¶ 24 second sentence); and, b) scoring and perforating are art recognized effective ways for creating a line of weakness to create a fold line to a sheet as exemplified in the teachings of Schirer (col.4 lines 26-36).

- Regarding Claim 3: Kabumoto, Ishikura, Shumake and Schirer teach the invention as described above in the rejection of claims 1 and 2. As to the slits or cuts being not more than 3 mm wide, 10 mm long and 1 mm apart, one of ordinary skill in the art would have found it obvious to vary the width, length and distance between the cuts as a matter of routine optimization. Said person would

optimize the process by finding the balance between ease of folding and strength of the resulting hinge.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT J. GRUN whose telephone number is (571)270-5521. The examiner can normally be reached on Monday-Thursday 07:30-17:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam C. Yao can be reached on (571)272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT J GRUN/
Examiner, Art Unit 4111

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/Sam Chuan C. Yao/
Supervisory Patent Examiner, Art Unit 4111